

# Exhibit 3

**IEEE 100**  
**The Authoritative Dictionary of**  
**IEEE Standards Terms**

**Seventh Edition**



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## Introductio

## How to Us

## Categories

## Trademar

## The Autho

## Abstracts

## Non-IEEE

residual voltage

residue

resistance relay

given. 2. For the pur-  
mean measurements  
2. The recommended  
ion. This will accom-  
Hz to tens of kHz.  
to be used. *Synonym:*  
M) [14], 748-1979w  
ial) The magnetic in-  
ing force in a material  
gnitized condition.  
(Std 100) 270-1966w  
magnetic amplifier  
the magnetizing force  
ally magnetized with  
ce of a specified peak  
residual induction dif-  
quires symmetrically  
(MAG) 393-1977s  
e during which a sys-  
ted to perform its in-  
conditions.  
(PE/NP) 1205-1993  
dies) A property by  
n (induction) after the

.00) 270-1966w, [84]  
vel.

istancy of probe cou-  
amplitude of the probe  
when reflected waves  
y proper matching at  
attenuation along the  
tio of one-half of the  
the probe output, as-  
e probe, at a specified  
e. *Note:* This quantity  
reproducible and the  
ce eliminated by sub-  
sile the nonrepeatable  
probe pickup depends  
of the probe. *See also:*  
y-wave ratio.

(IM/HFIM) [40]  
ster) The erroneous re-  
e reflectometer is ter-  
*See also:* measurement  
(IM/HFIM) [40]  
ts input, derived from  
nsformers, is propor-  
nent of a polyphase  
'G/PE) C37.100-1992  
pectrum analyzer) A  
input. (IM) [14]  
sponse in the absence  
ro pip.

(IM) 748-1979w  
recorded data and the  
ting.  
WM&A) 1057-1994w  
lotted line) The stand-  
ted line is terminated  
by a signal source that  
for waves reflected  
l standing-wave ratio  
al probe pickup or the  
moved along the line.  
(IM/HFIM) [40]  
rge voltage) The volt-  
ground terminals of an  
rge current. *See also:*  
(PE) [8], [84]

(2) (protective relaying) The sum of the three line-to-neutral  
voltages on a three-phase circuit. (PE/PSR) C37.95-1973s  
residue The value of  $\lim_{s \rightarrow s_0} (s - s_0) \times F(s)$ , where  $F(s)$  has the

complex pole  $s_0$ . *See also:* pole. (C/DA) 1481-1999

residue check (computers) A check in which each operand is  
accompanied by the remainder obtained by dividing this num-  
ber by  $n$ , the remainder then being used as a check digit or  
digits. *See also:* modulo  $N$  check. (C) [20], [85]

resin (rotating machinery) Any of various hard brittle solid-  
to-soft semisolid amorphous fusible flammable substances of  
either natural or synthetic origin; generally of high molecular  
weight, may be either thermoplastic or thermosetting.

(PE) [9]

resin-bonded paper-insulated bushing (outdoor electric ap-  
paratus) A bushing in which the major insulation is provided  
by paper bonded with resin. (PE/TR) 21-1976

resin impregnated paper-insulated bushing A bushing in  
which the internal insulation consists of a condenser wound  
from untreated paper and subsequently impregnated with a  
curable resin. *Note:* A resin impregnated paper bushing may  
be provided with an insulating envelope, in which case the  
intervening space may be filled with another insulating me-  
dium. (PE/TR) C57.19.03-1996

resist (electroplating) Any material applied to part of a cathode  
or plating rack to render the surface nonconducting. *See also:*  
electroplating. (EEC/PE) [119]

resistance (1) (A) (network analysis) That physical property  
of an element, device, branch, network, or system that is the  
factor by which the mean-square conduction current must be  
multiplied to give the corresponding power lost by dissipation  
as heat or as other permanent radiation or loss of electromag-  
netic energy from the circuit. (B) (network analysis) The real  
part of impedance. *Note:* Definitions (A) and (B) are not  
equivalent but are supplementary. In any case where confu-  
sion may arise, specify definition being used. *See also:* resis-  
tor. (IA/IM/IAC/HFIM) 270-1966, [60], [40]

(2) (shunt) The quotient of the voltage developed across the  
instrument terminals to the current passing between the cur-  
rent terminals. In determining the value, account should be  
taken of the resistance of the instrument and the measuring  
cable. The resistance value is generally derived from a direct-  
current measurement such as by means of a double Kelvin  
bridge. (PE/PSIM) 4-1978s

(3) (automatic control) A property opposing movement of  
material, or flow of energy, and involving loss of potential  
(voltage, temperature, pressure, level). (PE/EDPG) [3]

(4) *See also:* radiation resistance; antenna resistance.  
(AP/ANT) 145-1993

resistance, apparent *See:* apparent resistance.

resistance, body *See:* body resistance.

resistance box A rheostat consisting of an assembly of resistors  
of definite values so arranged that the resistance of the circuit  
in which it is connected may be changed by known amounts.  
(Std 100) 270-1966w

resistance braking A system of dynamic braking in which elec-  
tric energy generated by the traction motors is dissipated by  
means of a resistor. *See also:* dynamic braking.

(EEC/PE) [119]

resistance bridge smoke detector (fire protection devices) A  
device that responds to an increase of smoke particles and  
moisture, present in products of combustion, which fall on an  
electrical bridge grid. As these conductive substances fall on  
the grid they reduce the resistance of the grid and cause the  
detector to respond. (NFFA) [16]

resistance-capacitance characteristic, input (oscilloscopes)  
The direct-current resistance and parallel capacitance to  
ground present at the input of an oscilloscope.

(IM) 311-1970w

resistance-capacitance coupling Coupling between two or  
more circuits, usually amplifier stages, by means of a com-

bination of resistance and capacitance elements. *See also:*  
coupling. (EEC/PE) [119]

resistance-capacitance oscillator Any oscillator in which the  
frequency is determined principally by resistance-capacitance  
elements. *See also:* oscillatory circuit. (EEC/PE) [119]

resistance drop (power and distribution transformers) The  
component of the impedance voltage drop in phase with the  
current. (PE/TR) C57.12.80-1978r

resistance furnace An electrothermic apparatus, the heat en-  
ergy for which is generated by the flow of electric current  
against ohmic resistance internal to the furnace.

(EEC/PE) [119]

resistance grading (cr corona shielding) A form of corona  
shielding embodying high resistance material on the surface  
of the coil. *Synonym:* corona shielding. (PE) [9]

resistance grounded (1) (power and distribution transform-  
ers) Grounded through impedance, the principal element of  
which is resistance. *Note:* The resistance may be inserted ei-  
ther directly, in the connection to the ground, or indirectly,  
as for example, in the secondary of a transformer, the primary  
of which is connected between neutral and ground, or in series  
with the delta-connected secondary of a wye-delta grounding  
transformer. (PE/TR) C57.12.80-1978r

(2) (system grounding) Grounded through impedance, the  
principal element of which is resistance. *Note:* The high-re-  
sistance-grounded system is designed to meet the criterion of  
 $R_0 \leq X_{C0}$  in order to limit transient overvoltages due to arcing  
ground faults. The ground-fault current is usually limited to  
less than 10 A.  $X_{C0}$  is the distributed per-phase capacitive  
reactance to ground of the system. The low-resistance-  
grounded system permits a higher ground-fault current (on  
the order of 25 A to several hundred amperes) to obtain suf-  
ficient current for selective relay performance. For the usual  
system the criterion for limiting transient overvoltages is  $R_0/  
X_0 \geq 2$ . (IA/PSE) 142-1982s

resistance lamp An electric lamp used to prevent the current in  
a circuit from exceeding a desired limit. (EEC/PE) [119]

resistance magnetometer A magnetometer that depends for its  
operation upon the variation of electrical resistance of a ma-  
terial immersed in the field to be measured. *See also:* mag-  
netometer. (EEC/PE) [119]

resistance method of temperature determination (power and  
distribution transformers) The determination of the tem-  
perature by comparison of the resistance of a winding at the  
temperature to be determined, with the resistance at a known  
temperature. (PE/TR) C57.12.80-1978r, C57.15-1999

resistance modulation (bolometric power meters) A change  
in resistance of the bolometer resulting from a change in  
power (RF, ac, or dc) dissipated in the element. *Note:* The  
resistance modulation sensitivity is the (dc) change in resis-  
tance per unit (dc) change in power at normal bias and at a  
constant ambient temperature. Resistance modulation fre-  
quency response is the frequency of repetitive (sinusoidal)  
power change for which the peak-to-peak resistance change  
is 3 dB lower than the asymptotic, maximum value at zero  
frequency. (IM) 470-1972w

resistance modulation effect (bolometric power meters) A  
component of substitution error (for dc power substitution)  
in bolometer units in which both ac and dc bias is used. *Note:*  
This component is dependent upon the frequency of the ac  
bias and the frequency response of the element; it is usually  
very small, and usually not included in the effective efficiency  
correction for substitution error. It is caused by resistance  
modulation of the element, and is more pronounced in bar-  
retters than in thermistors. (IM) 470-1972w

resistance-reduction factor A number usually less than or  
equal to 1.0 used in load and resistance factor design (LRFD).  
Called strength-reduction factor in 751-1990.

(T&D/PE) 751-1990

resistance relay A linear-impedance form of distance relay for  
which the operating characteristic on an  $R-X$  diagram is a  
straight line of constant resistance. *Note:* The operating char-

## resistance starting

acteristic may be described by the equation  $R = K$  or  $Z \cos \theta = K$ , where  $K$  is a constant, and  $\theta$  is the angle by which the input voltage leads the input current.

(SWG/PE) C37.100-1992

**resistance starting** A form of reduced-voltage starting employing resistances that are short-circuited in one or more steps to complete the starting cycle. *See also:* resistance starting, motor-armature; resistance starting, generator-field.

(IA/ICTL/AC/APP) [60], [75]

**resistance starting, generator-field** Field resistance starting provided by one or more resistance steps in series with the shunt field of a generator, the output of which is connected to a motor armature. *See also:* resistance starting; resistance starting, motor-armature.

(IA/AC) [60]

**resistance starting, motor-armature** Motor resistance starting provided by one or more resistance steps connected in series with the motor armature. *See also:* resistance starting; resistance starting, generator-field.

(IA/AC) [60]

**resistance-start motor** A form of split-phase motor having a resistance connected in series with the auxiliary winding. The auxiliary circuit is opened when the motor has attained a predetermined speed. *See also:* asynchronous machine.

(EEC/PE) [119]

**resistance temperature detector (resistance thermometer resistor) (resistance thermometer detector)** A resistor made of some material for which the electrical resistivity is a known function of the temperature and that is intended for use with a resistance thermometer. It is usually in such a form that it can be placed in the region where the temperature is to be determined. *Note:* A resistance temperature detector with its support and enclosing envelope, is often called a resistance thermometer bulb. *See also:* electric thermometer; embedded temperature detector.

(EEC/PE) [119]

**resistance thermometer (resistance temperature meter)** An electric thermometer that operates by measuring the electric resistance of a resistor, the resistance of which is a known function of its temperature. The temperature-responsive element is usually called a resistance temperature detector. *Note:* The resistance thermometer is also frequently used to designate the sensor and its enclosing bulb alone, for example, as in platinum thermometer, copper-constantan thermometer, etc. *See also:* instrument; electric thermometer.

(PE/PSIM) 119-1974w

**resistance times capacitance (RC), RC time constant** The product of some resistance and some capacitance (having the dimensions of time) or a time constant computed in some other way.

(C/DA) 1481-1999

**resistance to ground (surge arresters)** The ratio, at a point in a grounding system, of the component of the voltage to ground that is in phase with the ground current, to the ground current that produces it.

(PE) [8], [84]

**resistance voltage drop (1)** The component of voltage drop in phase with the current.

(PE/TR) C57.16-1996

**(2)** The component of the impedance voltage in phase with the current.

(PE/TR) C57.15-1999

**resistant (1) (rotating machinery)** Material or apparatus so constructed, protected or treated, that it will not be injured readily when subjected to the specified material or condition, for example, fire-resistant, moisture-resistant. *See also:* asynchronous machine.

(SWG/PE/PSR) C37.30-1971s, C37.90-1978s

**(2) (power and distribution transformers)** So constructed, protected, or treated that the apparatus will not be damaged when subjected to the specified material or conditions for a specified time.

(PE/TR) C57.12.80-1978r

**(3) (used as a suffix)** So constructed, protected, or treated that damage will not occur readily when the device is subjected to the specified material or condition.

(SWG/PE) C37.100-1992, C37.40-1993

**resistive attenuator (waveguide)** A length of waveguide designed to introduce a transmission loss by the use of some dissipative material. *See also:* waveguide; absorptive attenuator.

(AP/ANT) [35], [84]

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## resolution

**resistive conductor** A conductor used primarily because it possesses the property of high electric resistance.

(T&D/PE) [10]

**resistive coupling** The association of two or more circuits with one another by means of resistance mutual to the circuits.

(PE/PSIM) 81-1983

**resistive distributor brush** Resistive pickup brush in an ignition distributor cap. *See also:* electromagnetic compatibility.

(EMC/INT) [53], [70]

**resistive feedback preamplifier (germanium gamma-ray detectors)** A charge-sensitive preamplifier in which charge that accumulates on the feedback capacitor is continually discharged through a resistor in parallel with the capacitor.

(NPS) 325-1986s

**resistive ignition cable** High-tension ignition cable, the core of which is made of resistive material. *See also:* electromagnetic compatibility.

(EMC/INT) [53], [70]

**resistive loads** Loads for which the current supplied by the low-voltage power supply/battery varies proportionally with the source voltage. *Note:* These loads will demand less current when the source voltage is switched from the low-voltage power supply to the battery. Typically, relays fall into this category.

(VT) 1476-2000

**resistivity (material)** A factor such that the conduction-current density is equal to the electric field in the material divided by resistivity.

(PE/PSIM) 81-1983

**resistivity, volume** *See:* volume resistivity.

**resistor (1)** An element within a circuit that has specified resistance value designed to restrict the flow of current. *See also:* potentiometer.

(C) 610.10-1994w

**(2)** A device with the primary purpose of introducing resistance into an electric circuit. (A resistor as used in electric circuits for purposes of operation, protection, or control, commonly consists of an aggregation of units. Resistors, as commonly supplied, consist of wire, metal, ribbon, cast metal, or carbon compounds supported by or embedded in an insulating medium. The insulating medium may enclose and support the resistance material as in the case of the porcelain tube type or the insulation may be provided only at the points of support as in the case of heavy duty ribbon or cast iron grids mounted in metal frames.)

(IA/MT) 45-1998

**resistor, bias** *See:* bias resistor.

**resistor furnace** A resistance furnace in which the heat is developed in a resistor that is not a part of the charge.

(EEC/PE) [119]

**resistor-start motor** A single-phase induction motor with a main winding and an auxiliary winding connected in series with a resistor, with the auxiliary winding circuit opened for running operation.

(PE) [9]

**resistor-transistor logic (RTL)** A family of circuit logic in which the basic circuit element is a network of resistors and transistors.

(C) 610.10-1994w

**re-solution (electrodeposition)** The passing back into solution of metal already deposited on the cathode.

(EEC/PE) [119]

**resolution (1) (supervisory control, data acquisition, and automatic control)** The least value of the measured quantity that can be distinguished.

(SWG/PE/SUB) C37.100-1992, C37.1-1994

**(2) (A) (data transmission)** The result of deriving from a sound, scene, or other form of intelligence, a series of discrete elements wherefrom the original may subsequently be synthesized. **(B) (data transmission)** The degree to which nearly equal values of a quantity can be discriminated. **(C) (data transmission)** The fineness of detail in a reproduced spatial pattern. **(D) (data transmission)** The degree to which a system or a device distinguishes fineness of detail in a spatial pattern.

(COM/PE) 599-1985

**(3) (storage tubes)** A measure of the quantity of information that may be written into and read out of a storage tube. *Notes:* 1. Resolution can be specified in terms of number of bits, spots, lines, or cycles. 2. Since the relative amplitude of the

## resolution bandwidth

output may vary with representation of the amplitude versus qu

**(4) (television)** A n tail. *Note:* Resolution ber of lines  $N$  (nom width of each line is practice, where the measured in either t the number of test c to the vertical dime

**(5) (oscilloscopes)** lines discernible al extremities of the g oscillograph.

**(6) (transmission)** which nearly equal

**(7)** The smallest quantity is divided i control system.

**(8) (digital delay)** the doublet.

**(9) (acousto-optic)** to the minimum re

minimum spot size and phase distributi minimum spot size minimum spot size, with  $\alpha = 1$  rectang ular beam, constan amplitude. For oper will be reduced as

**(10) (A) (spectrum)** play adjacent resp measure of resoluti sponses that merge lyzer) (resolution). specified and contr plitude responses

**(C) (spectrum)** and difference between tude when the notch the smaller signal. lution). For every c time there exists a (R). This is the op theoretically as:

$$R_b = K \sqrt{\frac{\text{Frequency}}{\text{Sweep}}}$$

The factor  $K$  shall

**(11) (pulse measur)** characteristic, prop can unambiguously urement process.

**(12) (electrotherm)** discernible change Std 544-1975w, res with which the pow out scale.

**(13) (plutonium)** change in instrum

**(14) (image proces)** processing, the deg image can be distr

**(15)** In micrograph record fine detail.



weep, recurrent

sweep reset

1133

switch

capacitor bypass  
time character-  
(T&D/PE) [26]  
chines) A test in  
ith its terminals  
(PE) [9]

o storage areas,  
of auxiliary stor-  
orm an exchange  
(C) 610.12-1990

quantity for the  
ng another quan-  
are: the displace-  
athode-ray tube;  
erwise specified,  
ep may also vary  
er.

HFIM) [34], [40]  
if the horizontal  
d with the refer-  
d in terms of av-  
See also: oscillo-  
(IM) 311-1970w  
racy of indicated  
is.

(IM) 311-1970w

required for the  
(IM/HFIM) [40]  
ratio of the sweep  
of one sweep and

(IM/HFIM) [40]

erated external to  
(IM) 311-1970w

epetition rate. See  
(IM/HFIM) [40]  
form used to con-  
used to unblank  
sweep. See also:  
(IM/HFIM) [40]

at generates a sig-  
signal is usually a  
(IM) 311-1970w  
interval between  
rigger circuits are  
(IM) 311-1970w  
displacement error  
ified points on the  
(IM) 311-1970w  
ntrol used on some  
d, free-running, or  
(IM) 311-1970w  
output frequency  
een two frequency  
(COM) [50]

on time.  
p-time/division set-  
(IM/HFIM) [40]  
minimum possible  
p and the initiation  
erval. See also: os-  
(IM/HFIM) [40]

**sweep reset (oscilloscopes)** In oscilloscopes with single-sweep operation, the arming of the sweep generator to allow it to cycle once. See also: oscillograph. (IM/HFIM) [40]

**sweep, sine-wave** See: sine-wave sweep.

**sweep, stairstep** See: stairstep sweep.

**sweep switching (automatic)** Alternate display of two or more time bases or other sweeps using a single-beam cathode-ray tube: comparable to dual- or multiple-trace operation of the deflection amplifier. (IM) 311-1970w

**sweep time (acoustically tunable optical filter)** The time to continuously tune the filter over its spectral range. (UFFC) [17]

**sweep time division (spectrum analyzer)** The nominal time required for the spot in the reference coordinate to move from one graticule division to the next. Also the name of the control used to select this time. (IM) 748-1979w

**swell (1)** A momentary increase in the power frequency voltage delivered by the mains, outside of the normal tolerances, with a duration of more than one cycle and less than a few seconds. See also: surge. (SPD/PE) C62.48-1995, C62.41-1991r

(2) An rms increase in the ac voltage, at the power frequency, for durations from a half-cycle to a few seconds. See also: overvoltage; surge. (PE/T&D) 1250-1995

(3) An increase in rms voltage or current at the power frequency for durations from 0.5 cycles to 1 min. Typical values are 1.1 to 1.8 pu. See the figure below.

(SCC22/IA/PSE) 1346-1998, 1100-1999

**swellable powder** A powder that swells upon contact with moisture. A jelly like material is formed to block the longitudinal transmission of moisture. (PE/IC) 1142-1995

**swim** The visual misrepresentation that occurs when images on a display surface appear to move about their normal positions. (C) 610.6-1991w

**swing** A transient power flow due to change in relative angles of generation on the system caused by a change in transmission or generation configuration. (PE/PSR) C37.113-1999

**swinging compass (navigation aid terms)** An accurate, portable magnetic compass used to indicate magnetic headings during aircraft magnetic compass calibration.

(AES/GCS) 172-1983w

**swingout panel (packaging machinery)** A panel that is hinged-mounted in such a manner that the back of the panel may be made accessible from the front of the enclosure.

(IA/PKG) 333-1980w

**swing rack cabinet** An assembly enclosed at the top, side, and rear with front hinged door for front access having a swing open frame for equipment mounting (e. g., nominal 19-inch wide chassis and subpanel assemblies).

(SWG/PE) C37.100-1992, C37.21-1985r

**switch (1) (telephone loop performance) (switching system)** A system that establishes communication channels among two or more of its interfaces at customers' demand.

(COM/TA) 820-1984r

(2) **(high-voltage switchgear)** A device designed to close or open, or both, one or more electric circuits. See also: switching device. (SWG/PE) C37.40-1993

(3) **(computers)** A device or programming technique for making a selection, for example, a toggle, a conditional jump. (C) [20], [85]

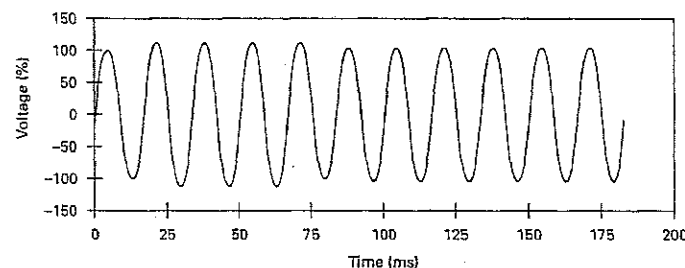
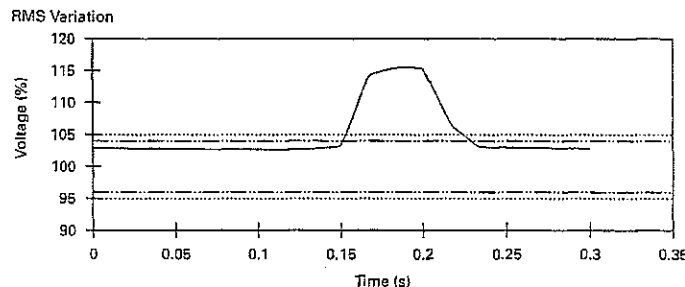
(4) **(electric and electronics parts and equipment)** A device for making, breaking, or changing the connections in an electric circuit. Note: a switch may be operated by manual, mechanical, hydraulic, thermal, barometric, or gravitational means, or by electromechanical means not falling within the definition of "relay." (GSD) 200-1975w

(5) A device that connects ringlets and has queues. It can behave as a consumer (when accepting remote subactions) and as a producer (when forwarding the subaction to another ringlet). It may be visible as a node, with a nodeId, or be transparent, with no nodeId. A switch differs from a bridge in that a switch may connect more than two ringlets, but a bridge connects only two. A switch is generally assumed to connect multiple instances of the same bus standard, while a bridge may connect different bus standards.

(C/MM) 1596-1992

(6) A routing device (for example, a box or board) providing a set of numbered node interfaces, constructed from one or more switch chips (or by other methods). See also: switch chip; fabric; node interface. (C/BA) 1355-1995

(7) (A) An electrical or mechanical device used for opening, closing, or changing the connection of a circuit. *Synonym:*



Swells occurring upon recovery from a remote system fault

swell

## switch base

1134

## switched virtual circuit

switchpoint. *See also:* DIP switch; display switch; sense switch; function switch; relay. (B) To open, close, or change the connection of a circuit as in definition (A). (C) A device used for making a selection, as in a toggle.

(C) 610.10-1994

(8) A device for opening and closing or for changing the connection of a circuit. In these rules, a switch is understood to be manually operable, unless otherwise stated.

(NESC/T&amp;D) C2-1997, C2.2-1960

(9) In a propulsion system, the historic name for the lowest level of positive tractive effort and power; so called because it is typically utilized for slow-speed switching movements, such as yard moves, train makeup, etc. (VT) 1475-1999

(10) A layer 2 interconnection device that conforms to the ISO/IEC 10038 [ANSI/IEEE 802.1D-1990] International Standard. *Synonym:* bridge. (C/LM) 802.3-1998

(11) An electronic device connected between two data lines. A switch can exist in one of two states, referred to as "open" and "closed." The state at any time depends on a digital control variable. When the switch is open, the pathway between the two data lines has a very high impedance (ideally infinite) so that signals appearing on the data lines should be completely independent. When the switch is closed, the pathway between the two data lines has a very low impedance (ideally zero) so that signals on the two data lines should be identical. *Notes:* 1. Practical electronic switches implemented in silicon depart from the ideal in at least three ways.

- In the "on" state, the pathway between the two data lines may have significant impedance, or the relationship between voltage and current may be nonlinear (e.g., a voltage-dependent "impedance").
- In the "off" state, there may be significant interaction between the signals on the two data lines due to, for example, stray capacitance.
- In either state there may be significant leakage pathways through which current can pass from the data lines to the surrounding circuitry or vice versa.

The effects of all these characteristics will need to be considered as part of the detailed implementation, especially in a system containing multiple-switch networks. 2. A switching action effectively in series with the function signal pathway can sometimes be obtained without a physically separate device by incorporating a high-Z or enable facility into the functional circuitry. 3. Data transmission through a switch is normally assumed to be bidirectional (as with electromechanical devices such as relays or semiconductor switches such as transmission gates). Some forms of switch can implement only unidirectional voltage or current dependence. *See also:* conceptual switch; high-Z. (C/TT) 1149.4-1999

**switch base** The main members to which the insulator units are attached. (SWG/PE) C37.30-1992s

**switchboard (1)** (electric power system) A large single panel, frame, or assembly of panels, on which are mounted, on the face or back or both, switches, overcurrent and other protective devices, buses, and usually instruments. *Note:* Switchboards are generally accessible from the rear as well as from the front and are not intended to be installed in cabinets. *See also:* panelboard; center of distribution; distribution center. (NESC) [86]

(2) A type of switchgear assembly that consists of one or more panels with electric devices mounted thereon, and associated framework. *Note:* Switchboards may be classified by function, that is, power switchboards or control switchboards. Both power and control switchboards may be further classified by construction as defined. (SWG/PE/NESC) C37.100-1992, C2-1997

(3) When referred to in connection with supply of electricity, a large single panel, frame, or assembly of panels, on which are mounted (on the face, or back, or both) switches, fuses, buses, and usually instruments. (T&D) C2.2-1960

**switchboard cord** A cord that is used in conjunction with switchboard apparatus to complete or build up a telephone connection. (EEC/PE) [119]

**switchboard lamp** (switchboard) A small electric lamp associated with the wiring in such a way as to give a visual indication of the status of a call or to give information concerning the condition of trunks, subscriber lines, and apparatus. (EEC/PE) [119]

**switchboard position** (telephone switching systems) That portion of a manual switchboard normally provided for the use of one operator. (COM) 312-1977w

**switchboards and panels** (electric installations on shipboard)

A generator and distribution switchboard receives energy from the generating plant and distributes directly or indirectly to all equipment supplied by the generating plant. A subdistribution switchboard is essentially a section of the generator and distribution switchboard (connected thereto by a bus-feeder and remotely located for reasons of convenience or economy) that distributes energy for lighting, heating, and power circuits in a certain section of the vessel. A distribution panel receives energy from a distribution or subdistribution switchboard and distributes energy to energy-consuming devices or other distribution panels or panelboards. A panelboard is a distribution panel enclosed in a metal cabinet. (IA/MT) 45-1983s

**switchboard section** (telephone switching systems) A structural unit providing for one or more operator positions. A complete switchboard may consist of one or more sections. (COM) 312-1977w

**switchboard supervisory lamp** (cord circuit or trunk circuit) A lamp that is controlled by one or other of the users to attract the attention of the operator. (EEC/PE) [119]

**switchboard supervisory relay** A relay that controls a switchboard supervisory lamp. (EEC/PE) [119]

**switch chip** A VLSI integrated circuit with two or more link interfaces, between which it provides packet routing. *See also:* link; switch. (C/BA) 1355-1995

**switch compartment** (metal-enclosed interrupter switchgear) That portion of the switchgear assembly that contains one switching device, such as an interrupter switch, power fuse interrupter switch combination, etc., and the associated primary conductors. (SWG/PE) C37.20.3-1996

**switch core** A magnetic core in which the core material generally has a high residual flux density and a high ratio of residual to saturated flux density; Switching does not occur when the magnetic force imposed on the core is below a threshold value. (C) 610.10-1994w

**switched bank** A capacitor bank designed for controlled operation. power systems relaying. (T&D/PE) 1036-1992, C37.99-2000

**switched current** The prospective current to be broken during a switching operation by each set of main switching or transition contacts (resistance-type LTC) or transfer contacts (reactance-type LTC) incorporated in the arcing switch or arcing tap switch. (PE/TR) C57.131-1995

**switched network (1)** A computer interconnect that uses switches to allow intermodule communications. (C/BA) 14536-1995

(2) A network, using a switching technique, to direct messages from the sender to the ultimate recipient. *See also:* circuit-switched network; store-and-forward switched network. (C) 610.7-1995

**switched-service network** (telephone switching systems) An arrangement of dedicated switching facilities to provide telecommunications services for a specific customer. (COM) 312-1977w

**switched virtual circuit** A virtual circuit that is established on an as-needed basis to interconnect any two end users attached to a network. *Note:* SVC service requires the definition of some call control procedures for the establishment, maintenance, and termination of the virtual circuit. An SVC may not be available when the user wants if too many SVCs are open at once. *See also:* permanent virtual circuit. (C) 610.7-1995

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